

EXAMINATION REFORM IN CENTRAL UNIVERSITIES

*Report of a Committee appointed by the
University Grants Commission*

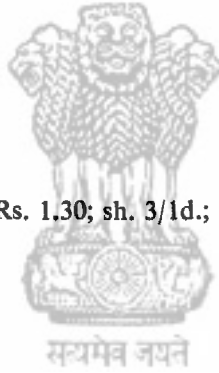


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FOREWORD

The University Grants Commission, appointed a committee to study the examination system of central universities and make suitable recommendations for examination reform, under the chairmanship of Professor F. C. Auluck of the Department of Physics, Delhi University. The committee has prepared a report which would be of interest and utility not only to the central universities but also to other universities and institutions generally. The Commission is grateful to the chairman and the members of the committee for the time and attention they gave to this work and for their report and recommendation.

New Delhi
August 16, 1969.



P. J. Philip
Secretary
University Grants Commission

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I

INTRODUCTION

Successive commissions and committees connected with education have emphasized the need for examination reform and suggested specific measures towards this end. The University Education Commission (1948-49), recognising the nature and magnitude of the problem, went so far as to say : "We are convinced that if we are to suggest any single reform in university education it would be that of the examinations".* The Commission recommended the introduction of objective testing, measurement and appraisal, to be supplemented by the essay type of examination after minimising the outstanding defects of the latter viz., subjectivity and the consequent inaccuracy of marking.

The University Grants Commission appointed an expert committee in September 1957, under the chairmanship of Shri S. R. Dongerkery, to examine the problems connected with examination reform. The committee rightly took the view that "examination is an aspect of the educational process which is intimately linked with its other important aspects—teaching and learning—and that teaching, learning and examination actually constitute a unity of functions. Teaching as well as learning are bound to be affected by a defective examination system since both are dominated by the objectives that govern examination".** The committee recommended improvement of admission procedures, institution of tutorials and seminars, continuous assessment of student performance, holding of seminars and conferences, use of methods of evaluation other than questions of the essay type, and research in regard to both the educational and technical aspects of examination.

For a fuller discussion with the university and college teachers on the objectives of teaching and research, four regional seminars were organised by the Commission under the guidance of Dr. B. S. Bloom of the University of Chicago, an expert in the subject. The seminars were held at the Universities of Osmania, Poona, Patna and Aligarh in 1958-59. The proceedings of the seminar have been published by the University Grants Commission under the title "Evaluation in Higher Education." The Commission also published a

*Report of the University Education Commission—volume I, 48-49, p. 328.

**Report on Examination Reform—p. 1.

brochure entitled "Three Studies in Examination Technique", which contained the following papers of Dr. H. J. Taylor, formerly Vice-Chancellor of the Gauhati University :

1. An examination of examiners
2. Supplementary examinations
3. Grace marks

A number of problems have also been taken up for study by examination reform and research units, set up by some universities with financial assistance from the Commission. The unit at the Aligarh University has produced a report entitled "A University Looks at its Examination." The report highlights some of the problems of initiating examination reform in a university and provides some experimental evidence of the results of changes in examinations.

The Examination Reform Unit at the M. S. University of Baroda has brought out a technical report relating to variations in examination performance and class record, student performance, relative validity of scaled and unscaled marks in predicting future marks, qualitative analysis of essay-type questions etc.

The Examination Research Unit at the Gauhati University under the direction of Dr. H. J. Taylor has produced two important papers viz., (1) The Problem of the Third Examiner ; and (2) The Influence of Scaling on Examination Results.

The Delhi University undertook a pilot project on analysis of its examination results and carried out five studies. The first study pertains to a detailed examination of the performance of science students at successive examinations and the relationship of marks obtained at these examinations. The second study gives a statistical analysis of the marks of M.A. previous and final examinations of the Delhi University during the years 1959-62, and estimates the conditional probability of a student maintaining the level of his performance. In the third study an attempt was made to calculate the combined failure rate at the B.A. pass examination of the University in four selected colleges. The fourth study deals with the effects of various factors such as age, sex, medium of instruction etc., upon examination results. In the fifth and final study, a new method for dealing with borderline cases deserving 'pass' has been suggested.

The Committee on Standards of University Education, appointed by the University Grants Commission, also gave considerable attention to the

problem of examination reform. The committee discussed some of the methods of increasing the reliability of internal sessional evaluation and also of removing the sources of error from the present method of examination. It was suggested that in the changed circumstances of today, universities should think of arranging examinations in parts and spacing them conveniently.

The Education Commission (1964-66) has made the following recommendations on the subject of examination reform in higher education :

“There is need for a central source to guide and activate a movement of examination reform, without which no early and effective progress is possible. For instance, the activity that one now sees in this matter in the state boards for secondary education is due largely to the Central Examination Reform Unit in the National Council of Educational Research and Training. We recommend that the UGC should set up immediately a similar examination reform unit for higher education at a sufficiently high level which would work in collaboration with the universities. This could become the starting point of an effective programme of reform.

The next step should be to persuade some universities to launch upon the programme in a big way. In addition to major universities which will have to give a lead by abolishing the external examinations altogether, the other universities should set up special units for examination reform and should prepare and implement a programme of reform in consultation with the central unit.

Another important point of emphasis would be the reorientation of university teachers to adopt new and improved techniques of evaluation. A programme of seminars, discussions or workshops should be organised to serve as the spearhead of the reform. This will have to be continued from year to year to evaluate results, to try out experiments and to make further plans. This would be the responsibility of the central and local examination reform units.

We trust that, if a few universities can make a determined attack on the problem and achieve a break-through, the whole programme of examination reform will be greatly accelerated.

We recommend that the grading or classification of examination results be done on a relative rather than on an absolute basis. In our present

system of examinations, an 80 per cent mark, say, in mathematics, does not convey the same meaning as, say 80 per cent mark in history or English. Again an 80 per cent mark in one year does not mean the same thing as 80 per cent mark in another year because examiners may be different, and there may be many other variations from year to year. A system of grading must be such as to bring out whether a student belongs, say, to the top 20 per cent of his class or to the bottom 20 per cent. It is strongly recommended that even if the present system of examinations and classifying the results is continued, it should be supplemented by giving in the same certificate, the relative grading of the student, say on a five point scale. Grade 'A' would mean that the student is in the top 20 per cent of those who have been successful at the examination.

We recommend that early measures should be taken to abolish payment of remuneration to examiners. Evaluation is part of teaching and teachers should be willing to undertake it as part of their duties. This is one of the reasons why we have recommended an increase in the salary scales of teachers. However, we recognise that the load of this work should not be too heavy on any teacher and would, therefore, suggest that the maximum number of scripts to be examined by a teacher in a year should not exceed 500.

One line of attack would be to abolish set syllabuses and the external examinations based on them, and to replace them by a system of internal and continuous evaluation by the teachers themselves. This is already being done in some institutions like the IIT's or the agricultural universities and it could be increasingly extended to others as soon as the necessary facilities and conditions can be provided. We hope that, at no distant date, it will be adopted by all the teaching universities and that the major universities would give a lead in the matter".

APPOINTMENT OF THE COMMITTEE

The vice-chancellors of the central universities, at their meeting held on 1st December, 1966, recommended the setting up of a committee to review the examination system of the central universities and to suggest necessary changes in the techniques of measurement and evaluation with a view to ensuring greater reliability and validity. Accordingly, the University Grants Commission appointed a committee consisting of the following members:

1. Professor F. C. Auluck,
Department of Physics,
Delhi University.
2. Professor Nurul Hasan,
Dean, Faculty of Arts,
Aligarh Muslim University.
3. Professor Rais Ahmed,
Department of Physics,
Aligarh Muslim University.
4. Professor A. K. Sen,
Professor of Economics,
Delhi University.
5. Dr. B. B. Sen,
Adhyaksha, Vidya Bhavana,
Visva-Bharati.
6. Shri D. N. Ray,
Adhyaksha, Vinaya Bhavana,
Visva-Bharati.
7. Professor S. K. R. Bhandari,
Dean, Faculty of Commerce,
Banaras Hindu University.

8. Dr. K. N. Lal,
Registrar,
Banaras Hindu University.
9. Dr. S. C. Goel,
Education Officer,
University Grants Commission.

The committee met on March 15, 1967 and May 6, 1967. The report of the committee follows.



RECENT CHANGES IN THE EXAMINATION SYSTEM OF THE CENTRAL UNIVERSITIES

Our terms of reference include a critical appraisal of the changes introduced by the central universities in their examination system. We are happy to note that the central universities are alive to the problems of examination reform and have devoted considerable attention and thought to the problem of making examinations an accurate instrument of testing as also to orient them to the objectives of teaching and learning. Two universities viz., Aligarh Muslim University and Banaras Hindu University, have switched on to the semester system with effect from the academic session 1967-68. The Delhi University has introduced a comprehensive system of sessional assignments and also drafted model question papers in certain subjects requiring analytical and critical thinking on the part of the candidates. The Visva-Bharati also has a system of giving credit for sessional work in various courses of study both at the undergraduate and the postgraduate levels. The main features of the examination systems of the central universities are as follows :

I. Aligarh Muslim University

Teachers of the university, the various faculties and the academic council have, during the last two years, taken various measures for reorganising the courses of study and effecting suitable changes in examination procedures, both at the undergraduate and postgraduate levels. From the academic session 1967-68, the university has introduced the semester system and the honours courses at the undergraduate level in the faculties of arts, science and commerce. The courses of study have consequently been re-organised into semester courses. The semester system has also been introduced at the postgraduate level. The system provides for semester-wise examinations under which a student failing in a particular course could either repeat the course in the next semester or take another course in its place. It also gives the student a sufficiently high degree of flexibility in choosing courses from various fields in accordance with his talent and inclination, thus doing away with the rigidity of the old pattern. The choice of courses will however be made in such a way as to avoid overlapping between subjects. Every student

is assigned to an adviser who assists him in choosing the courses of study. The system is also expected to encourage coordination in the master's degree programmes of the various departments.

The academic session of the university consists of two semesters with a vacation between them. The first semester is from 24th July to 25th November followed by an examination from 27th November to 10th December. The second semester begins after winter vacation from 5th January to 30th April. The examination for the second semester is held from 2nd May to 15th May.

Every semester course carries a number of credits. For example, a course extending over three or four hours per week carries four credits. A shorter course extending over two hours per week carries two credits. In order to earn the credits a student has to pass in the sessional work prescribed for the course as well as the written examination held at the end of the semester.

Courses carrying four credits carry a maximum of 100 marks and those carrying two credits carry a maximum of 50 marks. The following percentage of marks has been prescribed for sessional work in the optional courses :

- (a) 40% for subjects in which there is no practical examination.
- (b) 30% for subjects in which there is a practical examination.
- (c) In laboratory courses 50% of the marks are prescribed for sessional work and 50% for the practical examination at the end of the semester.
- (d) No marks are prescribed for sessional work in compulsory and general courses.

Every regular or private candidate is assigned to an adviser appointed by the department of studies concerned with his main subject. Compulsory, general and subsidiary subjects are selected by the candidate with the approval of his adviser. All the courses selected by a candidate are entered on a course card maintained by the adviser. The adviser also records credits and marks obtained by the candidate on the course card.

The dean of the faculty concerned may, on the recommendation of the department concerned, permit a student to change his main subject. Such a change may only be allowed at the beginning of the second, third or the fourth semester. If a student wishes to change his main subject he can choose only one of those subjects which he had studied as a subsidiary subject during the earlier semesters. A student who wishes to change courses of study without changing the main subject may be allowed to do so with the approval of

his adviser not later than ten days after the commencement of any semester.

In order to be eligible for the award of B.A. (Hons.) or B.Sc. (Hons.) degree, a candidate shall have to pass in sessional work and semester examinations so as to accumulate at least 120 credits as under :

(a) Compulsory and general courses	24 credits
(b) Main subject	48 credits
(c) Subsidiary subject	48 credits

For the M.A./M.Sc./M.Com. examinations, the courses, the number of credits and marks allotted to each course, including sessional work and/or practical examination and/or viva-voce examination and/or seminars and/or projects and/or dissertations, shall be prescribed by the academic council on the recommendation of the departments of studies or the boards of studies and the faculties concerned.

To pass in a course and obtain the credits assigned to it a candidate must obtain at least 40% of the marks in sessional work (if prescribed) and at least 40% of the aggregate marks in sessional work and written and/or practical and/or viva-voce examinations and/or seminars and/or projects and/or dissertations, provided that private candidates shall be exempted from sessional work and in order to obtain the credits they shall be required to obtain at least 40% of the marks allotted to semester examinations. A candidate, who fails to obtain 40% of the aggregate marks but has passed in sessional work, may appear subsequently at the semester examination for that course as an ex-student to obtain the credits for it, provided that the marks awarded to such a candidate for sessional work during his regular course of study shall be taken into account at the subsequent examination. Candidates who accumulate the requisite number of credits mentioned above or more and who obtain 60% of the aggregate marks or more shall be placed in the I division, those who obtain less than 60% but not less than 50% shall be placed in the II division. Those who obtain less than 50% but not less than 36% shall be awarded the B.A. or B.Sc. (Pass) degree. In the case of postgraduate students those who obtain less than 50 per cent but not less than 40 per cent marks shall be placed in the third division. The University allows those passing with less than 50 per cent marks to improve their division by taking additional courses or by repeating some of the courses already covered.

II. Banaras Hindu University

The question of reforming its examination system has been engaging the attention of the Banaras Hindu University for some time. After careful

deliberation, the university recently introduced some far-reaching changes in its examination system in the light of the recommendations of the Education Commission, the UGC committees on examination reform and standards of university education, and the recommendations of the committee appointed by the university in terms of resolution No. 270 dated 11th October, 1966 of the standing committee of the academic council. The university committee on examination reform rightly took the view that the question of examination reform is closely linked with the wider question of improvement of standards and that the new system should have a high degree of flexibility to suit the special conditions and requirements of different faculties in the university. The changes introduced by the university in accordance with the recommendations of the committee merit serious attention and are reviewed in the following paragraphs.

The university has divided the academic year into two semesters with effect from July, 1967. The semester system has been introduced in M. Sc. (Prev.), M.A. (Prev.) in Sociology, Ancient Indian History, Political Science, Mathematics and Psychology, B. Com., M. Com., B. Sc. (Ag.), M. Sc. (Ag.), LL.B., Mining and Metallurgy and LL.M. The semesters are of equal duration and an examination is held at the end of each semester. The academic performance of a candidate is to be evaluated in respect of the courses of study prescribed for each semester through a process of continual assessment as well as an examination held at the end of each semester.

Simultaneously with the introduction of semester system, the university has introduced sessional work and tutorial assignments. Every student has to obtain the specified marks in sessionals in order to be eligible to appear at the semester examinations. The marks obtained by a student in sessionals are moderated by a departmental board of internal assessment and reviewed by the board of examiners which not only scrutinises marks but can also re-evaluate answer books. The board of internal assessment is designed to moderate the marks of students enrolled in the university teaching departments as well as the local affiliated colleges. The marked scripts of sessionals are shown to the students and this, it is expected, will minimise any possible abuse of the system of internal assessment.

The total marks assigned to the different courses of study are to be distributed for award as below :

- (i) up to, but not more than 25% for sessionals,
- (ii) up to, but not more than 25% for practicals, and

- (iii) the remaining marks for written examinations to be held at the end of each semester.

Each board of study may, however, adjust the percentage in the light of the prescribed courses of study. Generally speaking, the percentage of marks for sessional work varies from 20 to 30.

The sessional work comprises written class tests, quizzes, viva-voce tests, tour reports and general performance including attendance, regularity in submission of reports, home work, discussion etc. The system varies from faculty to faculty. In the faculty of commerce, for example, every student at the end of the M. Com. (Prev.) examination has to undergo practical training for two months in business houses, industrial concerns etc. and is required to submit a comprehensive report on his experiences and observations. The report is evaluated by two examiners and forms part of the final examination. A tutor is assigned to each group of students for their practical training. The business houses are also requested to submit reports on the performance of students. The students are also required to submit a research report during the fourth semester. Each student is assigned to a teacher for guidance in preparing the report. Each of the two reports, i.e., the field work report and the research report carries 100 marks.

The university has also introduced radical changes in practicals (including workshop practice), in which student performance is to be evaluated through a process of continual assessment as well as an examination at the end of the semester. Up to, but not more than 50% of the marks are assigned for continual assessment and the remaining marks for the examination at the end of the semester. Each board of studies has formulated the details of the items and the manner in which marks reserved for continual assessment or practical work are to be divided.

A candidate who secures up to, but not more than 15% less marks than the aggregate percentage of marks prescribed for passing the examination may be provisionally promoted at his option to the next higher semester, irrespective of his performance in individual papers. The candidate thus promoted will have to maintain good academic progress and also make up the deficiency of the lower examination at the next semester examination. A student may take the examination in all the papers but he shall be entitled to exemption in papers in which he secured the prescribed minimum pass marks in the concerned paper. The marks obtained by a student at a subsequent examination shall replace the original marks obtained by him. This promotion is made only to the next higher semester and the student has to clear the previous semester

papers before being promoted further. The maximum number of chances that a student may take has also been specified.

The introduction of the semester system has also led to modernisation of courses of study. In some of the departments, for example in botany and zoology, the courses have been made more flexible giving the students a wider choice in the areas of specialisation. The M. Com. course has been re-organised as a management course. Some of the faculties have assigned the number of lectures per topic.

The university has laid down comprehensive rules regarding the appointment of examiners. The boards of examiners are to be appointed by the standing committee of the academic council. It is proposed that each board may consist of :

1. Head of the department or incharge of department.
2. All professors of the department.
3. Two permanent teachers of the department nominated by the faculty with provision to co-opt additional members, if necessary.
4. The names of persons nominated by the board for appointment as an examiner shall be approved by the vice-chancellor and reported to the standing committee of the academic council for approval.

The board of examiners has the following functions :

1. To recommend names of examiners, including alternative examiners as far as possible in accordance with the following general principles :
 - (a) Internal examiners, shall be those who are currently teaching the subject.
 - (b) Not more than one paper be given to an examiner in any examination in a semester; where the course of study is spread over a period of two or more years, the number of examinerships offered to the examiner be not more than two in any semester.
 - (c) No examiner may ordinarily have more than 300 scripts to examine in any paper in a semester.

- (d) External examiners be persons who have specialised knowledge of the subject covered by the paper offered.
- (e) An external examiner be not appointed an examiner in the same paper for a continuous period of more than three years.
- 2. To moderate the papers set for various examinations of the department with the assistance of external moderators wherever necessary.
- 3. To scrutinize marks submitted by examiners, to re-evaluate answer books and to moderate marks given by the examiners wherever necessary
- 4. To submit the moderated marks to the controller of examinations.
- 5. The moderation of question papers in each subject shall be done by a board consisting of the head of the department concerned and an external examiner in the subject nominated by the standing committee every year for the purpose, at the time of the appointment of examiners.
- 6. In special cases the Standing Committee of the Academic Council may appoint any person to moderate the question papers of a subject or nominate an extra member of the board.

III. Delhi University

The university considered the specific recommendations of the UGC committee on examination reform at special meetings of the academic council and later appointed a working group to suggest concrete steps to be taken on the basis of the decisions of the academic council. This has led to many significant changes in the examination system of the university particularly in regard to the introduction of sessional assignments, framing of model question papers and adoption of new methods for ensuring a high degree of uniformity in the standards of evaluation.

A certain percentage of marks in each paper are awarded on the basis of certified attendance, home assignments and periodical tests in the following examinations :

- 1. Diploma examinations in European languages and Arabic.
- 2. Certificate in translation (English-Hindi) in paper V only.

3. Diploma in business management/industrial management.
4. M.A. in Hindustani music.
5. Bachelor of library science.
6. B. Ed.
7. M. Ed.
8. M.B.B.S.
9. B.Sc. Nursing (Hons.)
10. M. Nursing.
11. B.Sc. (Electrical/Mechanical/Civil Engineering).
12. B.E. Tech. (Electrical/Mechanical/Civil Engineering).

The academic council of the university has agreed in principle that 25 per cent marks in each subject/paper may be assigned to sessional work in the B.A. (Pass), B.Sc. (General), B.A. (Hons.), B. Com., B.Sc. (Hons.), M.A. (except economics, English, philosophy, Hindi, Sanskrit, Urdu, Arabic, Persian, modern Indian languages and Buddhist studies), M. Com. and M.Sc. examinations.

Internal assessment based on performance at tutorials, preceptorials and periodical tests has, however, been introduced at the college level for purposes of promotion of students from one class to another, as an experimental measure with effect from admissions for the year 1964-65. The position is to be reviewed on the basis of experience gained and if desirable, the scheme would be extended to the university teaching departments also.

Examiners are appointed by the university in accordance with the decisions taken by the academic council from time to time. The names of examiners are recommended by the committees of courses and studies. Their recommendations are considered by the faculties concerned and then by the academic council. The examiners are appointed by the executive council on the recommendations of the academic council. In case of examiners for the Ph.D. theses, the recommendations of the committees of courses and studies are not considered by the faculties but by the academic council direct. The lists prepared by the committees of courses are kept confidential and not circulated either to the members of the faculties or of the academic/executive council.

According to a decision of the academic council, not less than 50 per cent of the examiners for an examination should be external. This rule was strictly observed till some years back. In recent years, in view of the

difficulty of getting suitably qualified external examiners, the rule has been relaxed in the case of certain subjects.

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The foregoing review shows that during the last two to three years the central universities have introduced many significant changes in their examination system. The changes, *interalia*, include the introduction of the semester system and honours courses, reorganisation of courses of study, adoption of internal assessment and introduction of new techniques of setting question papers. They show a vivid awareness on the part of teachers and academic bodies of the growing urgency of effecting suitable changes in the examination system and their desire to make testing more appropriate to education and its underlying objectives. While the reforms initiated by the central universities cannot be described as revolutionary or even far-reaching, their impact will be watched with great interest as on the basis of initial success in these efforts, the programme could be launched upon in a big way in other universities and a major break-through achieved in the sphere of examination reform.

The introduction of the semester system by the Aligarh and Banaras Universities is a significant step which may lead to many desirable reforms in the traditional system of examinations and eventually succeed in overcoming some of the limitations inherent in the present system. It does not require a good deal of argument to prove that the old system under which the students were tested in the entire course at the end of one or two years is a sheer anachronism in this age of knowledge explosion. This casts such a burden on the student that he has to take recourse to cheap bazar notes and guides or to memorization with all its attendant evils. The semester system with an examination looming at the end of each term, would also encourage students to apply themselves assiduously to their studies and learning and thus reduce the rate of failure which under the present dispensation ranges between 20-30 per cent in the postgraduate examinations and between 50-60 per cent in the undergraduate examinations. As yet we do not have the results of the semester examinations conducted by the Aligarh and Banaras Universities but when these become available, it is hoped that they will demonstrate the qualitative and quantitative superiority of the system.

The semester system of the Aligarh Muslim University is different from the one adopted by the Banaras Hindu University in so far as it provides for credit points for different semester courses and the student has to accumulate the required number of credits to pass in sessional work and the semester examinations. This gives the student a high degree of flexibility in choosing

courses from various branches of study in keeping with his ability and aptitude. This is in line with the recommendations of the Education Commission (1964-66) which has stressed the need for flexibility in the choice and combination of subjects at both the undergraduate and postgraduate levels. The freedom to offer the general and subsidiary subjects from a wider area which the credit system necessarily implies is likely to encourage interdisciplinary approaches and the development of border-line subjects by opening up the channels of communication between different academic disciplines which have remained isolated for a variety of reasons.

While the Aligarh and Banaras Universities have paved the way for similar experiments by other universities and full credit should be given to them for the courage and wisdom in initiating and activating the movement towards examination reform, it has to be recognized that both these universities are in the happy situation of being universities of the unitary type and their experience may not be repeated in a federal university like Delhi or in a purely affiliating university. These universities will have to contend with the reaction of both students and teachers in their affiliated institutions and create a favourable climate in order to change the status quo. There can be no doubt, however, that the time has come when both the Delhi University and Visva-Bharati should think of introducing the semester system with such changes as may be appropriate to their situations. It is understood that the Visva-Bharati has recently set up a sub-committee of its academic council to examine the feasibility of introducing the semester system in the undergraduate courses from the next academic session.

An area in which all the four central universities have considerably advanced is related to the introduction of sessional work though in each university it is at different stages of development. The Aligarh Muslim University has prescribed 40 per cent marks for sessional work in subjects in which there is no practical examination and 30 per cent in subjects in which there is a practical examination but curiously enough no marks are provided for sessional work in the compulsory and general courses. The Banaras Hindu University has laid down up to but not more than 25 per cent marks for sessional work, which means that certain faculties will have a lower percentage of marks for sessional work than others. In both the Aligarh and Banaras Universities, a candidate has to obtain at least 40 per cent marks in sessional work in order to be eligible for the semester examinations. In Visva-Bharati marks varying from 20 per cent to 40 per cent are set aside in each theory paper for internal assessment to which due credit is given in the final examination. In case of practical courses e.g. in practical teaching (B. Ed.), the percentage is higher i.e. 50 per cent and in the sessional practical work

(B.Ed.), field work (B. Sc. Social Work), practical training in agriculture, dairy and field work (B.Sc. Ag.), the assessments are done wholly internally.

The Delhi University has introduced sessional work in the colleges only and that too for purposes of promotion from one class to another. It is expected that the university will take early steps to implement the decision of the academic council that 25 per cent marks in each subject/paper may be assigned to sessional work.

So far, only one university, viz., Banaras has made a serious attempt to tackle the problem of uniformity in the evaluation of sessional work. In Banaras, the marks obtained by a student in sessional tests are moderated by a departmental board of internal assessment and reviewed by the board of examiners which may call answer books for re-evaluation at its discretion. The problem does not arise in the case of Aligarh University and Visva-Bharati since they do not have affiliated colleges but Delhi with a number of constituent/affiliated colleges will have to think of proper review and moderation of sessional marks whenever it decides that marks in sessional tests are to be combined with the marks in the final university examination at the degree level.

No co-ordinated effort has been made so far in any of the four central universities firstly in regard to making the question papers problem-oriented and secondly to bring about a reasonable degree of uniformity in the standards of evaluation. The Delhi University has taken some initial steps to draft model question papers for undergraduate examinations and in regard to the setting of papers for the postgraduate examinations by a board in place of individual paper setters. We have had no opportunity of assessing the question papers set by Delhi and other universities during the last three or four years but we have reason to believe that by and large no radical reforms have been effected in the nature of the question paper or in regard to the adoption of scientific procedures of evaluation, combination of marks, classification of candidates and moderation of examination results. These and related problems are discussed in the following chapter.

OBSERVATIONS AND RECOMMENDATIONS

We would like to state at the very outset that examination reform is one field of educational endeavour where the problems are so subtle that the necessary changes have to be brought about after much careful deliberation and the process of change has inevitably to be slow and gradual. There are certain broad considerations that have to be constantly kept in view. Firstly, we have to take note of the fact that there is a widespread interest in examination reform not only in the central universities with which we are directly concerned but in other universities as well. If nothing worthwhile has been achieved so far it is largely due to genuine difficulties of a practical nature for which we have to find a satisfactory and urgent solution. Secondly, there is a vast literature available on the subject and there is not much point in approaching the question of examination reform from a merely doctrinaire point of view. The stage has been reached for undertaking a micro-study of the individual systems so that suitable changes may be brought about without undue delay and resistance on the part of those who are in the habit of accepting the status quo. Thirdly, while we recognize the need for planning and coordination to activate the movement towards examination reform, it is clear to us that we cannot bring about complete uniformity in evaluation procedures of different universities. Indeed, such rigidity would prevent innovations, hamper initiative and retard the search for the ideal system, and would also be inappropriate, since the problems facing the different universities are altogether different.

Ideally, a sound examination system must satisfy certain important conditions. It must be related to the objectives of education and as an instrument of measurement it must be accurate and appropriate. It should also lead to improvement of instruction and better conditions of study and learning. Various accomplishments and qualities of a student can be measured by different types of examinations. The essay type of examination, the oral examination, home assignments and writing of project reports all measure different abilities and aptitudes. Therefore, in order to arrive at a more reliable measure of a student's total performance, it would be best to encourage him to take different kinds of examinations. The annual examinations may remain of the essay type combined with an oral examination, while the

sessional assignments may include objective type tests, problem-solving exercises, home exercises and writing of reports.

(a) Nature of examination

A chief characteristic of the present examination system of the central universities is that it is of the 'essay' type which means that the student has the freedom to build up his theme, examine the facts critically and elaborate his ideas freely and fully. This has the advantage of developing in the student the faculty of creative thinking and judgement and the capacity to write and express himself. It must be admitted, however, that evaluation of such answers tends to become subjective, there being no precise tool of measurement in the hands of individual examiners. In contrast to this is the 'objective' type of test or multiple-choice questions which are being used by some of the American universities for aptitude testing for admission to their colleges and graduate schools. In these tests generally there are a number of questions and the student has to mark the right answer out of a number of options given to each question. Here marking is objective and scoring easy and quick. This method is being tried out, to a limited extent, in Banaras Hindu University where sessional work comprises among other things quizzes, which are like objective tests. In the Aligarh Muslim University there is provision for viva-voce examinations pertaining to projects and dissertations. We are of the view that it would be an advantage if the two systems could be suitably combined, i.e., while a majority of questions may continue to be of the essay-type, there may be some questions (say one or two sets of papers) of the objective type having separate time allotted to them. This may not be feasible in all the subjects (e.g. in history and English literature) but it should be possible in a number of subjects to introduce some specific questions of the short answer type, if not of the multiple-choice type. We are also of the view that in sessional tests which all the four central universities have introduced in one form or the other, evaluation should be done not only on the basis of written tests but through quizzes, viva-voce, practicals, problem-solving exercises, reports of field work, project reports, prescribed readings, etc. thereby giving the student the necessary practice in writing, thinking and expression and incentive to do independent reading and hard sustained work.

(b) Sessional work

While we agree that the introduction of sessional work by the central universities is a step in the right direction which is likely to have a deep impact on the study and learning habits of students, we realize the innumerable difficulties that arise when credit is given for such work and marks in

sessional tests are combined with marks in the final university examination as in the Aligarh and Banaras Universities and Visva-Bharati. Theoretically, this procedure is objected to on the ground that sessional tests and final examinations measure different abilities and aptitudes and marks obtained in them cannot be converted to a common unit of measurement. It is said that while performance in the final examination measures the capacity of a student to grasp the course as a whole, the sessional tests measure his ability to comprehend it in bits. From the practical point of view, the main difficulty is that in a university like Delhi where a large number of affiliated colleges are involved, the system of giving credit for sessional work may result in overestimation. This may be partly due to pressures of all kinds and partly to the desire of the teachers to improve the position of their candidates in the final examination. It is also possible that in some of the good affiliated colleges, the performance of their students in sessional tests might be underestimated. The point is that if marks in sessional tests are not likely to have a high degree of reliability and if we combine them with marks in the final university examination, the combined marks will be less trustworthy.

It may be mentioned in this connection that the question of the reliability of sessional tests is not relevant to the postgraduate courses of any of the central universities as these are offered by the university departments/constituent colleges only. The question is in main confined to the undergraduate courses in the Banaras and Delhi Universities where a large number of students are enrolled in their affiliated colleges. We have examined a number of possible remedies of making use of marks in sessional tests to the best possible advantage in such cases.

One of the suggestions in this regard is that for candidates of each institution, the internal marks should be scaled to a common mean and standard deviation. For example, if there are three institutions A, B and C and marks in the chemistry tests have a mean of 40 (SD 10), 50 (SD 15) and 60 (SD 5) respectively, they could be brought to a common scale, say, with a mean of 50 and SD equal to 10. This, however, would be assuming that the average marks in the three institutions concerned are the same but we know that the standards are not equivalent and there are good institutions as well as bad and indifferent institutions. The procedure of converting marks to a common scale is also highly cumbersome and time-consuming specially when a large number of optional papers are involved.

We considered a number of other suggestions such as the use of self-corrective exercises or objective type of tests or debarring from examination work examiners who tend to overestimate the performance of their students or taking

out of the scheme of internal evaluation colleges which do not exercise proper checks. These suggestions seem to be very difficult to implement. The construction of objective type of tests would require trained personnel in large number and considerable time to get students and teachers used to them. Similarly, debarring certain examiners and colleges from the scheme of internal evaluation would create such heart-burning that in the final analysis this would become a self-defeating process.

A suggestion worth considering is that while the ranking of a student may be on the basis of his performance in the final university examination, he may be given along with his degree, a certificate from the institution attended by him indicating the marks obtained in the internal tests. This would give the postgraduate admission committees and employing agencies in the private and public sectors a better insight into the calibre of candidates. In course of time they would come to attach their own value to certificates given by individual institutions giving low credence to those who overestimate the performance of their students. The main difficulty in this regard is that students may not do their home assignments regularly and take the sessional tests in all seriousness unless the marks in these tests are going to have a bearing on their final result in the university examination. We have therefore to give due importance to sessional marks by ploughing them into the final score if the scheme is to be implemented successfully.

One practical method of checking any possible abuses of the system of sessional assessment is to review the marks in sessional tests and university examinations and to scale the former whenever there is a large disparity between the two.* For example, if the difference between the sessional and university examination marks of a candidate is more than 10 per cent, the department concerned or the faculty as a whole may do the necessary scaling of marks and even call for the answer books, if necessary. Teachers of the affiliated colleges concerned could also be invited to the meetings of the departmental/faculty committee for necessary clarification. This method is likely to be introduced by the Banaras Hindu University and could be used with great advantage by the Delhi University to ensure reliability of sessional evaluation. It is also important that marks awarded for sessional work should be known to the student immediately after the test. This would be a possible check on biased marking on the part of the teacher which is likely to happen in some exceptional cases. There was general agreement about the recommendation of the Education Commission regarding the gradual

*The committee was not unanimous on this question and while some members preferred a separate certificate others wanted the sessional marks ploughed into the final score with periodical check-up.

replacement of the external examinations by a system of internal and continuous evaluation by the teachers themselves. The central universities may move in this direction if their experience with sessional marking encourages them to do so.

It goes without saying that the size of the tutorial groups should be comparatively smaller than what obtains at present in the central universities. Though the overall teacher-pupil ratio in the central universities is evidently more satisfactory than in the state universities, due consideration has to be given by the UGC to the fact that these universities have introduced sessional work on a comprehensive scale and the success of the scheme depends on the amount of individual attention which teachers are able to give. This is necessary if the home assignments are to be corrected carefully by the teachers concerned and the mistakes and other shortcomings discussed with the students. The UGC may consider in this connection the appointment of assistant lecturers or teaching assistants to help in the correction of tutorial work and sessional assignments. Alternatively, some allowance could be given to research scholars who may be assigned the work of correcting test papers etc.

The universities should also be assisted to create examination cells under the guidance of an evaluation expert. The association of university professors in advisory capacity would also be desirable. The function of the cell would be to carry out studies in correlation between sessional records and university examinations, item analysis of question papers and other studies pertaining to examinations. The cell may have two research/statistical assistants, one in the grade of Rs. 400-950 and the other in the grade of Rs. 300-600.

(c) Appointment of examiners

All the four central universities have the system of appointing internal as well as external examiners for university examinations. Their proportion is 50 per cent in the Aligarh and Delhi Universities and Visva-Bharati; there being no fixed proportion in the Banaras University. We discussed this question and felt that the appointment of external examiners may perhaps be justified in examinations where the number of examinees is very large, for example, in undergraduate examinations in arts, science and commerce but there is hardly any rationale in appointing external examiners for a small number of candidates as in postgraduate examinations. It is a basic principle of sound educational policy that evaluation should be done by one who imparts instruction in the concerned course and any mistrust of the teacher

could have a highly demoralizing influence on him. We therefore recommend that the system of appointing external examiners should be gradually abolished and replaced by internal assessment particularly at the postgraduate level. When this is done, teaching, learning and examinations would constitute a unity of functions instead of being in eternal conflict with one another.

(d) Number of examinations

The Aligarh and Banaras Universities, which have introduced the semester system, have an examination at the end of each semester but in the Delhi University and Visva-Bharati, the examination is held at the end of the year and even at the end of two years as in the three-year degree course of the Delhi University. The purpose of an examination is to afford an early opportunity to teachers to ascertain the progress of the students and to identify their weak points, and to give them proper guidance from the very beginning of their career in the university. The old system of testing students at the end of the course has become incompatible with the rapidly growing dimensions of knowledge. It is therefore of the utmost importance that universities should think of arranging examinations in parts and spacing them conveniently. We recommend that in the Delhi University and Visva-Bharati, so long as they do not adopt the semester system, there should be at least one university examination every year.

(e) Setting of question papers

As already stated, none of the four central universities has made any serious attempt to counteract the present tendency of setting routine questions which tend to elicit information in a mechanical way and fail to judge the candidate's capacity to analyse facts and to put them in a proper sequence. There is hardly any change in the attitude of paper setters who continue to tread along the beaten track and have a mortal fear in departing from the trends of the previous years or in trespassing the boundaries laid down by the syllabus. We believe that this is a crucial area of examination reform which calls for radical changes. For example, the question paper might contain at least one question which does not belong to the syllabus. This could be tried at the postgraduate examinations since at this level the student is expected to have a certain degree of maturity and access to the sources of knowledge. It would also be useful to have a large number of short answer questions rather than to have questions of other kinds. The questions should be specific so that the student is not left to guess what is in the mind of the paper-setter. The practice of giving a large number of optional questions should also be restricted as far as possible. In this connection, the system introduced by the Delhi

University under which papers for some of the postgraduate examinations are set and marked by a board and not by individual examiners has much to commend itself. The university has also drafted model question papers for undergraduate examinations. Similar experiments in other universities would go a long way in making question papers problem-oriented rather than memory-oriented, which has become the bane of our present examination system. We recommend that the UGC might convene a series of seminars of teachers in the central universities to discuss this important problem of reforming the question papers to make them balanced as well as problem-oriented. The model question papers prepared by the Delhi University, the questions set by boards of examiners, quizzes etc., may be collected and discussed at these seminars. Some experiments reported to have been made in changing the nature of question papers could also be discussed at such seminars.

(f) Uniformity in evaluation

It has already been stated that all the four central universities have essay-type examinations which imply subjective evaluation of student performance. Even under the present system, some measures can be undertaken to ensure a higher degree of reliability if not a fool-proof system of evaluation. It would be in the interest of uniformity of evaluation if the paper-setter is asked to prepare a tentative outline of answers to the questions set by him together with detailed instructions regarding marking and distribution of marks as done by the Delhi University. This outline should be circulated to all the examiners working under the guidance of the head-examiner. The examiners should also be requested to keep in view the distribution of marks, i.e. the marks to be awarded for an excellent answer, good answer, fair answer, poor answer etc. This is necessary in view of the fact that for every examinee a number of optional subjects/papers are involved. The examiners should also prepare detailed reports on the performance of students together with their suggestions for improving methods of study and instruction. The reports should be circulated to the teachers concerned and discussed at meetings of the boards of studies. There should also be a ceiling on the number of scripts that an individual examiner may examine as in the Aligarh, Banaras and Delhi Universities which have limited the maximum number of scripts to 300. The Delhi University has also given the option to paper-setters and examiners for postgraduate examinations to ask for additional examiners in case the number of scripts is more than 100.

(g) Moderation of results

The present system of moderation being entrusted to boards with vast discretionary powers as in the Banaras and Delhi Universities or the award of

grace marks according to prescribed rules leaves much to be desired. In this connection we discussed the use of probability tables prepared by Dr. H.J. Taylor, former Vice-Chancellor of the Gauhati University, published in the brochure entitled "Three Studies in Examination Technique", but felt that the procedure suggested by him is based on certain assumptions regarding the standard error of marking and would in any case be highly cumbersome in practice. The only practical method would be to prescribe a much lower percentage of pass marks in individual papers say 10 per cent lower than in the aggregate marks. For example, if the minimum pass marks are 33 per cent of the aggregate, this may be 25 per cent in each individual paper. Such a procedure could be adopted by those of the central universities which take into consideration marks in individual papers.

(h) Grade system

The practice prevailing in the central universities of combining marks in different subjects/papers to get an absolute total is incorrect, as the final ranking of a student is affected by the average marks in a subject as well as by the spread of marks. Under the present system, 80% marks in one subject does not convey the same meaning as 80% marks in another subject, as the range of marks is different in different subjects. Consequently, the final result tends to be determined largely by subjects in which the range is wider. One method of obviating this difficulty is to convert the numerical marks into grades on a 5-point or 9-point scale. In the 5-point scale assuming normal distribution, the top 3-4 per cent students in a subject may be given A, next 24 per cent B, next 45 per cent C, next 24 per cent D and the lowest 4 or 3 per cent E. The grades are then converted into points 5, 4, 3, 2 and 1, corresponding to grades A, B, C, D and E respectively. The points obtained by a student are combined in order to get his class/division. We discussed this question but felt that the grade system, if adopted as such, is likely to create difficulties in such matters as admission to postgraduate courses, selection for national scholarships etc., since it would not be possible to distinguish between two students getting A's or B's and so on. We therefore suggest the adoption of the grade system by the central universities with the provision that marks obtained by a student should be supplied along with his grade in the examination. This suggestion would not be applicable in the case of courses, where the number of candidates is small e.g., in honours or post-graduate examinations, especially in the smaller universities like Visva-Bharati.

SUMMARY OF OBSERVATIONS AND RECOMMENDATIONS

1. A chief characteristic of the present examination system of the central universities is that it is of the 'essay' type which means that the student has the freedom to build up his theme, examine the facts critically and elaborate his ideas freely and fully. However, evaluation of such answers tends to become subjective, there being no precise tool of measurement in the hands of individual examiners. It would be an advantage if some questions are introduced (say one or two sets of papers) of the objective type having separate time allotted to them. This may not be feasible in all the subjects (e.g. in history and English literature) but it should be possible in a number of subjects to introduce some specific questions of the short-answer type, if not of the multiple-choice type.

2. It would be advantageous if in sessional tests which all the four central universities have introduced in one form or the other, evaluation is done not only on the basis of written tests but through quizzes, viva-voce, practicals, problem-solving exercises, reports of field work, project reports, prescribed readings, etc. thereby giving the student the necessary practice in writing, thinking and expression and encouragement to do independent reading and hard sustained work.

3. While the introduction of sessional work by the central universities is a step in the right direction which is likely to have a deep impact on the study and learning habits of students, innumerable difficulties may arise when credit is given for such work and marks in sessional tests are combined with marks in the final university examination as in the Aligarh and Banaras Universities and Visva-Bharati. Various solutions of this problem are discussed in the report.

4. One practical method of checking any possible abuses of the system of sessional assessment is to review the marks in sessional tests and university examinations and to scale the former whenever there is a large disparity between the two. For example, if the difference between the sessional and university examination marks of a candidate is more than 10 per cent, the department concerned or the faculty as a whole may do the necessary scaling of marks and even call for the answer books, if necessary. Teachers of the

affiliated colleges concerned could also be invited to the meetings of the departmental/faculty committee for necessary clarification. This method is likely to be introduced by the Banaras Hindu University and could be used with great advantage by the Delhi University to ensure reliability of sessional evaluation.

5. It is also important that marks awarded for sessional work should be known to the student immediately after the test. This would be a possible check on biased marking on the part of the teacher which may happen in some cases.

6. The system of external examinations should be gradually replaced by internal and continuous evaluation by the teachers themselves, if the experience of the central universities with sessional marking encourages them to do so.

7. The size of the tutorial groups should be comparatively smaller than what obtains at present in the central universities. Though the overall teacher-pupil ratio in the central universities is evidently more satisfactory than in the state universities, due consideration has to be given by the UGC to the fact that these universities have introduced sessional work on a comprehensive scale and the success of the scheme depends on the amount of individual attention which teachers are able to pay. The UGC may consider in this connection the appointment of assistant lecturers or teaching assistants to help the correction of tutorial work and sessional assignments. Alternatively, some allowance could be given to research scholars who may be assigned the work of correcting test papers etc.

8. The universities should also be assisted to create examination cells under the guidance of an evaluation expert. The association of university professors in advisory capacity would also be desirable. The function of the cell would be to carry out studies in correlation between sessional records and university examinations, item analysis of question papers and other studies pertaining to examinations. Each cell may have two research/statistical assistants, one in the grade of Rs. 400-950 and the other in the grade of Rs. 300-600.

9. The appointment of external examiners may perhaps be justified in examinations where the number of examinees is very large, for example, in undergraduate examinations in arts, science and commerce but there is hardly any rationale in appointing external examiners for a small number of candidates as in postgraduate examinations.

10. It is important that universities should think of arranging examinations in parts and space them conveniently. It is recommended that in the Delhi University and Visva-Bharati, so long as they do not adopt the semester system, there should be at least one university examination every year.

11. Paper-setting is one crucial area of examination reform which calls for radical changes. For example, the question paper might contain at least one question which does not belong to the syllabus. This could be tried at the postgraduate examinations since at this level the student is expected to have a certain degree of maturity and access to the sources of knowledge.

12. It would also be useful to have a large number of short answer type questions rather than a few other kinds of questions. The questions should be specific so that the student is not left to guess what is in the mind of the paper-setter. The practice of giving a large number of optional questions should also be restricted as far as possible.

13. The UGC might convene a series of seminars of teachers in the central universities to discuss the important problem of reframing the question papers to make them balanced as well as problem-oriented.

14. In the interest of uniformity of evaluation, the paper-setter may be asked to prepare a tentative outline of answers to the questions set by him together with detailed instructions regarding marking and distribution of marks as done by the Delhi University. This outline should be circulated to all the examiners working under the guidance of the head-examiner. The examiners should also be requested to keep in view the distribution of marks, i.e. the marks to be awarded for an excellent answer, good answer, fair answer, poor answer etc.

15. The examiners should also prepare detailed reports on the performance of students together with their suggestions for improving methods of study and instruction. The reports should be circulated to the teachers concerned and discussed at meetings of the boards of studies.

16. There should also be a ceiling on the number of scripts that an individual examiner may examine as in the Aligarh, Banaras and Delhi Universities which have laid down the maximum number of scripts to be 300. The Delhi University has also given the option to paper-setters and examiners for postgraduate examinations to ask for additional examiners in case the number of scripts is more than 100.

17. The present system of moderation being entrusted to boards with vast discretionary powers as in the Banaras Hindu and Delhi Universities or the award of grace marks leaves much to be desired. One practical method would be to prescribe a much lower percentage of pass marks in individual papers say 10 per cent lower than in the aggregate marks. Such a procedure could be adopted by those of the central universities which take into consideration marks in individual papers.

18. The practice prevailing in the central universities of combining marks in different subjects/papers to get an absolute total is incorrect, as the final ranking of a student is affected by the average marks in a subject as well as by the spread of marks. One method of obviating this difficulty is to convert the numerical marks into grades on a 5-point or 9-point scale. The grade system, may, however, create difficulties in such matters as admission to postgraduate courses, selection for national scholarships etc., since it would not be possible to distinguish between two students getting A's or B's and so on. It is, therefore, suggested that the central universities may adopt the grade system with the provision that marks obtained by a student should be supplied along with his grade in the examination. This suggestion would not be applicable in the case of courses, where the number of candidates is small e.g., in honours or postgraduate examinations, especially in the smaller universities like Visva-Bharati.

